College of Architecture, Art, and Planning

Architecture

Architectural Design

A **studio fee** of $10 is charged each semester for every design course.

Sequence Courses

101 Design I Fall. 3 credits. Limited to department students.
Studios and lecs, M W F 2–6. Staff.
An introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises are aimed at developing an understanding of the issues, elements, and processes of environmental design.

102 Design II Spring. 3 credits. Limited to department students. A continuation of Architecture 101.
Studios and lecs, M W F 2–6. Staff.
Human, social, technical, and aesthetic factors related to space and form. Design problems range from those of the immediate environment of the individual to that of small social groups.

201–202 Design III and IV Fall and spring. 4 credits each term. Coregistration in Architecture 231–232 required. Limited to department students.
Studios and sems, M W F 2–6. Staff.

301–302 Design V and VI Fall and spring. 6 credits each term. Limited to department students.
Studios and sems, M W F 2–6. Staff.

401–402 Design VII and VIII Fall and spring. 6 credits each term.
Studios and sems, M W F 2–6. Staff.
Programs in architectural design, urban design, or architectural technology and environmental science are offered each term.

501 Design IX Fall or spring. 8 credits.
Studios, M W F 2–6. Staff.

502 Design X–Thesis Fall or spring. 8 credits. Required of all students who are candidates for the B.Arch degree, who must satisfactorily complete a thesis during one term of their last year in residence. Students accepted for admission to the graduate studio are exempt from the thesis requirement.
Studios, M W F 2–6. Staff.

503–504 Design IX–Thesis I and Design X–Thesis II Fall or spring. 8 credits each term. Prerequisite: permission of department.
Studios, M W F 2–6. Staff.
Students who have obtained approval may elect to spend two terms working on the thesis.

510 Thesis Introduction Fall or spring. 2 credits. Required of all architecture students in the year preceding their thesis.
Lec and sem, R 1:25–3:20. Staff.
Lectures, seminars, and independent research leading to complete development of the student's thesis program. General instruction in the definition, programming, and development of a thesis is followed by tutorial work with the student's advisory committee.

601–602 Special Program Fall or spring. 9 credits each term. Intended primarily for students applying to a graduate program in the college.
Hours to be arranged. Staff.

111–112 Elective Design Studio 111, fall; 112, spring. 3 credits each term. Limited to students from outside the department. Prerequisite: permission of department office. Coordinated by the Department of Architecture office.
M W F 2–6. Staff.

200, 300, 400, 500 Elective Design Fall or spring. Credit as assigned. Open by permission to transfer students who have not been assigned to a sequence course. Prerequisite: permission of department office. Each student is assigned to a class of appropriate level.
M W F 2–6. Staff.

Nonsequence Courses

310 Special Problems in Architectural Design Fall or spring. Registration and credit by arrangement.
Hours to be arranged. Staff.
Independent study.

[611–612 Urban Housing Developments 611, fall; 612, spring. 2 credits each term. Limited to fourth- and fifth-year students in architecture, and graduate students. Prerequisite: permission of instructor. Not offered 1980–81.
Sem, hours to be arranged. O. M. Ungers.
Large-scale housing developments, particularly in relation to size, density, and problems of infrastructure.]

[613 Transportation Fall. 2 credits. Prerequisite: permission of instructor. Not offered 1980–81.
Sem, R 3:30–5:30. P. Cohen, A. Meyburg.
The impact of various transportation forms on the environment are considered from the perspectives of architects, engineers, planners, and human ecologists. Readings and discussions of past, current, and future transportation modes focuses on aesthetic and physical aspects.]

614 Low-Cost Housing Spring. 3 credits. Prerequisite: permission of instructor.
Sems, T R 1:25–2:15. F. O. Slate, P. Cohen, C. B. Daniels, H. W. Richardson.
Aspects of low-cost housing involving engineering technology, architecture, physical planning, economics, and sociology.

618–619 Seminar in Urban and Regional Design 618, fall; 619, spring. 3 credits each term. Limited to fifth-year and graduate students.
Hours to be arranged. O. M. Ungers, staff, and guest lecturers.
A broad range of issues and problems of urban and regional development and the context in which the designer functions are surveyed. Selected case studies are presented by the participants and visitors.

Graduate Courses

711–712 Problems in Architectural Design 711, fall; 712, spring. 9 credits each term.
Studio and sem, hours to be arranged.
O. M. Ungers.
The basic first-year design course for graduate students whose major concentration is architectural design.

713–714 Problems in Urban Design 713, fall; 714, spring. 9 credits each term.
Studio and sem, hours to be arranged. C. Rowe.
The basic first-year design course for graduate students whose major concentration is urban design.

715–716 Problems in Regional Design 715, fall; 716, spring. 9 credits each term.
Studio and sem, hours to be arranged. Staff.
The basic first-year design course for graduate students whose major concentration is regional design.

811 Thesis or Research in Architectural Design Fall or spring. 9 credits.
Hours to be arranged. O. M. Ungers.
Second-year design course for graduate students whose major concentration is architectural design.

812 Thesis of Research in Urban Design Fall or spring. 9 credits.
Hours to be arranged. C. Rowe.
Second-year design course for graduate students whose major concentration is regional design.

Structures

Sequence Courses

221 Mathematical Techniques Fall. 3 credits.
Lecs, T R 10:10–11; rec to be arranged.
Mathematics department staff.
Mathematical concepts and operations used in architecture are introduced.

222 Structural Concepts Fall or spring. 4 credits. Prerequisite: Architecture 221 or approved equivalent.
Lecs and sems, T R 9:05–11. F. W. Saul.
Fundamental concepts of structural behavior. Statics and strength of materials.

321 Structural Systems I Fall. 3 credits. Prerequisites: Architecture 221 and 222.
Lecs and sems, T R 11:15–1:10. F. W. Saul.
Structural design concepts and procedures for steel building construction.

322 Structural Systems II Spring. 3 credits. Prerequisite: Architecture 222.
T R 11:15–1:10. F. W. Saul.
Structural design concepts and procedures for reinforced concrete building construction.

Nonsequence Courses

323 Advanced Steel Building Design Fall. 3 credits. Prerequisites: Architecture 321 and permission of instructor.
Sems, M W F 10:10–11. F. W. Saul.
Design and investigation of advanced systems of steel building structure, plastic design of continuous beams, rigid frames, and high-rise buildings.

[324 Surface Structures Spring. 3 credits. Prerequisite: permission of instructor. Not offered 1980–81.
Sem, hours to be arranged. D. P. Greenberg.
The qualitative and quantitative analysis and design of thin shell architectural structures, including shells of revolution, cylindrical shells, hypars, and folded plates. Suspension structures. The architectural implications and problems of curvilinear forms. Construction techniques.]

326 Building Substructure Spring. 3 credits. Prerequisites: Architecture 322 or concurrent registration and permission of instructor.
Sem, hours to be arranged. F. W. Saul.
The principles of soil mechanics and subsurface exploration. Design of building foundations—footings, piles, and subgrade walls.

328 Advanced Reinforced Concrete Buildings Systems Spring. 3 credits. Prerequisites: Architecture 322 and permission of instructor.
Sem, hours to be arranged. Staff.
Methods and specifications for the design and construction of reinforced concrete building systems are reviewed. Two-way framing systems. Precast concrete construction. Discussion of ultimate strength and yield line theories. Quality control of reinforced concrete. Exploration of new techniques in concrete construction. Other selected topics.

Architectural Principles, Theories, and Methods

Sequence Courses

131 Introduction to Architecture Fall. 2 credits. Open to students in other colleges.
Lec, T 2–4. Staff.
The built and natural environments are introduced as a context for culture. Architecture as an environmental design discipline and its relation to other fields is discussed.

231 Architectural Elements and Principles Fall. 3 credits. Architecture students must register concurrently in Architecture 201.
Studios and lecs, T R 1:30–3:25. Staff.
Theory of the order, perception, and function of architectural space. Discourse on the nature of architectural systems and the multiplicity of ways they can be used to solve architectural problems.

232 Design Methods and Programming Spring. 3 credits. Architecture students must register for this course concurrently with Architecture 202.
Studios and lecs, T R 1:30–3:25. Staff.
Basic methods for developing architectural programs. Programming as a conceptual as well as a descriptive task is emphasized. Basic methods of design. Analytic and synthetic skills are stressed.

630–631 Advanced Seminar in Architecture 630, fall; 631, spring. 1 credit each term. Required of all fifth-year architecture students. Open to graduate students.
Hours to be arranged. Staff and visiting critics.

Nonsequence Courses

331 Special Problems in Principles, Theories, and Methods Fall or spring. Registration and credit by arrangement.
Hours to be arranged. Staff.
Independent study.

[333 Computer Applications Spring. 3 credits. Prerequisites: one term of calculus (Architecture 221 or equivalent), one term of FORTRAN programming, and Computer Science 100 and 106, or equivalent. Not offered 1980–81.
Hours to be arranged. D. P. Greenberg.
Current uses and potentials of digital computers in the architecture profession are introduced. Topics include architectural and planning models, structural analyses, energy simulation, critical path scheduling, and computer graphics.]

333–334 Computer Graphics (also Computer Science 417–418) Fall. 3 credits. Prerequisites: two terms of calculus and Computer Science 211, or equivalent.
T R 10:10–11. D. P. Greenberg.
Introduction to the principles of interactive computer graphics, including input techniques, display devices, display files, interactive graphic techniques, two- and three-dimensional computer graphics, perspective transformations, hidden line and hidden surface algorithms, and color picture generation.

335–336 Theory of Architecture 335, fall; 336, spring. 3 credits each term. Prerequisite: Architecture 231–232 or permission of instructor.
Lecs, T R 4:40–6:30 p.m. L. Hodgden.

437–438 Special Projects in Computer Graphics 437, fall; 438, spring. Variable credit. Limited to third-year students and above. Prerequisites: Architecture 334 plus concurrent registration in Computer Science 314 or equivalent, and permission of instructor.
Hours to be arranged. D. P. Greenberg.
Advanced work in computer graphics input and display techniques, including storage tube, dynamic vector and color raster displays.

[531–532 Computer-Aided Structural Design 531, fall; 532, spring. 4 credits each term. Limited to fourth-year students and above. Prerequisites: Architecture 334 and Engineering CEE G301–G302, Structural Engineering, concurrent registration in CEE G612 Advanced Structural Analysis, and permission of instructor. Not offered 1980–81.
D. P. Greenberg.
Advanced topics involving interactive computer graphics and advanced structural analysis techniques.]

533–534 Computer-Aided Environmental Design 533, fall; 534, spring. 4 credits each term. Limited to students in their fourth or later year. Prerequisites: Architecture 334, 362, and one year of college physics, and permission of instructor.
Staff.
Advanced topics involving interactive computer graphic and advanced environmental design techniques. Topics may include acoustics, lighting, and energy analyses.

[633–634 Introduction to Comparative Theories in Inquiry 633, fall; 634, spring. 3 credits each term. Not offered 1980–81. Limited to third-year students and above.
Sem, hours to be arranged. D. M. Simons.
The study of approaches to problem inquiry: the formal procedures of the fields of architecture, natural sciences, and applied sciences and the aesthetic and rational intelligences exemplified in these. Discussions of significant writings from various fields.]

635 Critical Theory in Architecture Fall or spring. 3 credits. Prerequisite: permission of the instructor.
Hours to be arranged. E. K. Morris.
An inquiry into the fundamental principles of architectural criticism, in theory and practice, with emphasis on the philosophical problems involved.

639 Principles of Design Process Fall. 3 credits. Limited to third-year architecture students and above; students in other colleges must have permission of instructor.
Sems, M W 10:10–12:05. A. Mackenzie.
Analysis of the major theories and techniques of design developed during the past fifteen years, with special emphasis on application to the solution of whole problems in architectural design.

Note: **667–668 Architecture in Its Cultural Context I and II** is accepted as a theory course.

Architectural History

Sequence Courses

141–142 History of Architecture I and II 141, fall; 142, spring. 3 credits each term. Students in other colleges may take either or both terms for credit.
Lecs, T R 11:15–1:10. C. F. Otto and staff.
History of architecture as social and cultural expression of Western civilization. Selected examples from Mesopotamia to the eighteenth century are considered in 141; history of modern architecture is discussed in 142.

Nonsequence Courses

244 History of Preindustrial Building Spring. 4 credits.
Lecs, hours to be arranged. W. W. Cummer.
The development of traditional architectural elements and forms; materials, methods, and design expression.

[340 Architecture of the Ancient Near East Spring. 3 credits. Prerequisite: Architecture 141 or permission of instructor. Not offered 1980–81.
Lecs, hours to be arranged. W. W. Cummer.
Architecture of the oldest historic civilizations associated with Western tradition. Emphasis on Egypt, Mesopotamia, and Anatolia.]

341 Architecture of the Classical World Fall. 3 credits. Prerequisite: Architecture 141 or permission of instructor.
T R 9:05–11. W. W. Cummer.
Architecture of the ancient Mediterranean civilizations, with emphasis on Greece and Rome.

[343 Introduction to the History of Urban Planning (also CRP 460) Fall. 3 credits. Not offered 1980–81.
J. W. Reps, W. W. Cummer.
Survey of urban planning in Western civilization from the Greeks and Romans through medieval Renaissance, and modern Europe and colonial and nineteenth-century America.]

[344 Islamic Architecture 3 credits. Prerequisite: permission of the instructor. Lec, hours to be arranged. Not offered 1980–81.]

346 The Renaissance Fall or spring. 3 credits. Prerequisites: Architecture 141–142 and permission of instructor.
Lecs, T R 9:05–11. C. F. Otto.
European architecture and city planning of the fifteenth and sixteenth centuries.

347 The Baroque Fall or spring. 3 credits. Prerequisites: Architecture 141–142 and permission of instructor.
Lecs, T R 9:05–11. C. F. Otto.
European architecture and city planning of the seventeenth and eighteenth centuries.

348 American Architecture I and II Fall and spring. 3 credits. Prerequisites: Architecture 141–142 or permission of instructor.
Lecs, M W 9:05–11. Staff.
Fall: Building in the United States from the colonial period through 1860. Spring: Building after 1860.

349 Modern European Architecture Fall. 3 credits. Prerequisite: permission of instructor.
M W 11:15–1:10. C. F. Otto.
A survey of nineteenth- and twentieth-century architecture and city planning in Europe.

442 Historical Seminars in Architecture Fall or spring. 2 credits. Prerequisite: permission of instructor.
Hours to be arranged. Staff.
Using historical evidence, students prepare papers discussing problems relating to design or architecture.

445 Special Investigations in the History of Architecture Fall or spring. Variable credit. Prerequisite: permission of instructor.
Hours to be arranged. Staff.
Independent study.

[447 History Workshop Fall or spring. Variable credit. Sem, hours to be arranged. Staff. Not offered 1980–81.]

448 Historical Lectures in Architecture Fall or spring. Variable credit. Prerequisite: permission of instructor.
Lec, hours to be arranged. Staff.
A series of one or two lectures a week on topics related to architectural history.

[540 Architectural Problems in Archaeological Fieldwork Spring. 3 credits. Not offered 1980–81.
Sem, hours to be arranged. W. W. Cummer.
A review and critique of students participation in the excavation of ancient cities or historic sites during the previous summer. For students in architecture and archaeology.]

541 Surveying for Archaeologists Fall. 3 credits.
T 2:30–4:25. W. W. Cummer and staff.
The excavation architect on an archaeological team. Methods of site survey, recording ancient buildings,

and preparation of working, analytic, and restored drawings. For students in architecture or archaeology who anticipate joining a summer excavation.

[542 Methods of Archival Research (also CRP 461) Spring. 3 credits. Not offered 1980–81.
Lec, R 10:10–12:05. K. C. Parsons.
Examination of methods for research in the history of architecture and urban development, using archival materials such as manuscripts, drawings, correspondence, and documents in the Cornell University archives and regional history collections.]

543 Measured Drawing Fall. 3 credits. For undergraduate architecture students and graduate students in history and preservation. Prerequisite: permission of instructor.
W 11:15–3:30. M. A. Tomlan, J. P. Shaw.
Combines study of architectural drawings as historical documents with exercises in preparing measured drawings of small buildings. Presents the basic techniques of studying, sketching, and measuring a building and the preparation of a finished drawing for publication.

544 Problems in Contemporary Preservation Practice (also CRP 563) Fall or spring. Variable credit.
Sem, T 2:30–4:25. M. A. Tomlan, T. Werbizky.
A review and critique of preservation planning projects selected to indicate the range of current approaches.

545 Perspectives on Preservation (also CRP 562) Fall or spring. 3 credits.
T 12:20–3:20. M. A. Tomlan.
Introductory course for preservation planning. The rationale for and methods of using existing cultural and aesthetic resources in the planning and design of regions and cities.

546 Documentation for Preservation Planning (also CRP 560) Spring. 3 credits.
M 2:30–5:30. M. A. Tomlan.
Methods of collecting, recording, processing, and analyzing historical architectural and planning materials.

547 Preservation Planning Workshop Fall or spring. 2 credits.
Sem, hours to be arranged. Staff and lecturers.
Seminar with visiting professionals, readings, and reports.

548 Problems in Modern Architecture Spring. 2 credits. Prerequisite: permission of instructor.
Lec, hours to be arranged. Staff.

[640 Seminar in Architecture of the Ancient Near East Fall. 4 credits. Prerequisite: Architecture 340 or permission of instructor. Not offered 1980–81.
W. W. Cummer.
Problems in Near Eastern architectural history.]

641 Seminar in Architecture of the Classical World Spring. 4 credits. Prerequisite: Architecture 341 or permission of instructor.
Hours to be arranged. W. W. Cummer.
Problems in Greek and Roman architectural history.

645 Building Materials Conservation (also CRP 564) Fall or spring. 3 credits. Limited to upperclass and graduate students.
Lec, hours to be arranged. M. A. Tomlan.
A survey of the development of building materials in the United States, chiefly during the nineteenth and early twentieth centuries, and a review of the measures that might be taken to conserve them.

646 Seminar in the Renaissance Spring. 4 credits. Prerequisite: Architecture 346 or permission of instructor.
Sem, hours to be arranged. C. F. Otto.
Historical problems of European architecture and city planning of the fifteenth and sixteenth centuries.

647 Seminar in the Baroque Spring. 4 credits. Prerequisite: Architecture 349 or permission of instructor.
Sem, hours to be arranged. C. F. Otto.
Historical problems in European architecture and city planning of the seventeenth and eighteenth centuries.

648 Seminar in the History of American Architecture Fall or spring. 4 credits. Prerequisite: permission of instructor.
M 12:20–2:15. Staff.
Investigation, by means of readings, lectures, and reports, of historical problems in architecture of the nineteenth and twentieth centuries in the United States.

649 Seminar in the History of Modern Architecture Fall or spring. 4 credits. Prerequisite: permission of instructor.
Sem, hours to be arranged. Staff.
Problems in modern art and architecture.

Graduate Courses

740 Informal Study in the History of Architecture Fall or spring. Variable credit. Prerequisite: permission of instructor.
Hours to be arranged. Staff.
Independent study.

741 Approaches to the History of Architecture and Urban Development Fall or spring. 2 credits.
Required of graduate students entering the field, and undergraduates in B.F.A. history of architecture program.
Sem, hours to be arranged. C. F. Otto and staff.
Motives, methods, and resources for scholarly work in history of architecture and history of urban development. Discussions, readings, and reports.

840 Thesis in Architectural History Fall or spring. Variable credit.
Hours to be arranged. Staff.
Independent study for the master's degree.

940 Dissertation in Architectural History Fall or spring. Variable credit.
Hours to be arranged. Staff.
Independent research by candidates for the Ph.D. degree.

Design Communications

Sequence Courses

151 Design Fundamentals I Fall. 2 credits.
Studio and lec, T R 4–6. Staff.
Fundamentals of visual and conceptual organization. Dynamics of perception; spatial organization and its representation. Demonstrative problems of an analytic and conceptual nature.

152 Design Fundamentals II Spring. 2 credits.
Studio and lec, T R 4–6. Staff.
Theory of visual and conceptual organization, spatial perception, spatial organization and its representation; demonstrative problems of an analytic and conceptual nature.

[251 Advanced Visual Communications Fall or spring. 3 credits. Not offered 1980–81.
Lec, hours to be arranged. Staff.
Introduction to photographic tools and methods and their application to architectural presentation and design simulation.]

Nonsequence Courses

251–252 Introductory Photography (also Art 161–162) 251, fall; 252, spring. 3 credits each term. Darkroom fee, $30.
T R 3:25–6:30. S. Bowman and staff.
For course description, see Art 161–162.

351 Second-Year Photography (also Art 261) Fall. 3 credits. Prerequisite: Architecture 251 or 252, or Art 161 or 162, or permission of instructor. Darkroom fee, $30.
T R 9:05–12:05. S. Bowman.
For course description, see Art 261.

352 Second-Year Photography (also Art 262) Spring. 3 credits. Prerequisite: Architecture 251 or 252, or Art 161 or 162, or permission of instructor. Darkroom fee, $30.
Hours to be arranged. Staff.
For course description, see Art 262.

353 Large-Format Architectural Photography Spring. 3 credits. Prerequisites: Architecture 251 or 252, or Art 161–162, or permission of instructor. Darkroom fee, $30.
Lec and studio, hours to be arranged. Staff.
The special uses of large-format view camera photography. Emphasis on the creative use of the view camera in architectural photography.

[354 Fundamentals of Motion Film Fall. 3 credits. Prerequisites: Architecture 251–252, or Art 161–162, or permission of instructor. Darkroom fee, $20. Not offered 1980–81.
Lec and studio, hours to be arranged. Staff.
Basic principles of 16mm motion picture film, in black and white and color, including use of camera and basic editing techniques.]

[355 Graphic Design Studio Fall or spring. 3 credits. Prerequisite: Architecture 152 or permission of instructor. Not offered 1980–81.
Lec and studio, hours to be arranged. Staff.
Design and preparation of materials for reproduction in print media. Studio in typography, available printing processes, and photomechanical methods of reproduction.]

[356 Architectural Simulation Techniques Spring. 3 credits. Prerequisite: Architecture 152 or permission of instructor. Not offered 1980–81.
Lec and studio, hours to be arranged. G. Hascup.
Two- and three-dimensional simulation techniques in architecture. Emphasis on simulation of environment, space, materials, and lighting as visual tools for architectural design.]

[451 Advanced Graphic Design Fall or spring. 3 credits. Prerequisite: Architecture 355 or permission of instructor. Not offered 1980–81.
Lec and studio, hours to be arranged. Staff.
Design and preparation of materials for reproduction in print media. Emphasis on specialized projects dealing with graphic processes.]

[452 Media Environments Fall or spring. 3 credits. Prerequisite: Architecture 251 or permission of instructor. Darkroom fee, $30. Not offered 1980–81.
Studio, hours to be arranged. Staff.
Programmed multiple projection presentations as communication systems. Includes the use of multi-screen slides, motion picture film, and sound in the creation of media environment.]

457 Special Project in Photography Fall or spring. Variable credit. Prerequisites: written proposal outlining the special project and permission of instructor. Darkroom fee, $30.
Hours to be arranged. Staff.
Independent study.]

[458 Special Project in Design Communication Variable credit. Prerequisite: written proposal outlining the special project and permission of instructor. Darkroom fee, $30. Not offered 1980–81.
Hours to be arranged. Staff.
Independent study.]

[459 Thesis Project in Design Communication Fall or spring. 6 credits. Limited to design

communications majors. Prerequisite: written proposal outlining the special project. Not offered 1980–81.
Hours to be arranged. Staff.
Independent study in design communication leading to a thesis project.]

Architectural Science and Technology

Sequence Courses

162 Introduction to Social Sciences in Design Spring. 2 credits.
Lecs, M W F 9:05. B. MacDougall.
An introduction to concepts and methods in the social sciences for architects; how approaches from anthropology, environmental psychology, and sociology can be used in the study and design of the built environment.

261 Introduction to Environmental Science Fall. 2 credits.
Lecs, M W 11:15–1:10. R. Crump.
The basic principles involved in inventory and analysis techniques as they relate to design implementation in the outdoor environment. Case studies depicting application of these principles at all scales of land planning and design are presented.

262 Building Technology, Materials, and Methods Spring. 3 credits. Prerequisites: Architecture 162 and 261.
Lecs, M W F 10:10. R. Crump.
Properties of materials — their use and application to the design of buildings and building systems. Discussion of various methods of building construction and assembly.

361 Environmental Controls I Fall or spring. 3 credits each term. Prerequisite: Architecture 262.
Lecs, W F 11:15. R. Crump.
Basic properties and principles of sound and light. Sound phenomena, noise control, absorption, acoustical design. Light, color, and form. Natural lighting possibilities and constraints. Good and bad examples of artificial lighting.

362 Environmental Controls II Fall or spring. 3 credits each term. Prerequisite: Architecture 361.
Lecs, W F 10:10–11. R. Crump.
Energy conservation. Passive solar design. HVAC distribution systems.

Nonsequence Courses

371 Environmental Technology Workshop I Fall. 2 credits. Prerequisite or corequisite: Architecture 361.
Studio, hours to be arranged. R. Crump.
The mechanical engineer's task and its relation to the architectural design process. Full-scale and model studies of the role of air movement and temperature in building design. Passive and active solar energy design.

372 Environmental Technology Workshop II Spring. 2 credits. Prerequisite or corequisite: Architecture 362.
Studio, hours to be arranged. R. Crump.
The tasks of the acoustical consultant, the electrical engineer, and the illumination consultant in relation to the architect's work. Acoustical and lighting design studies using full-scale mock-ups and specific building type studies. Cost factors.

561–562 Special Problems in Architectural Science 561, fall; 562, spring. Variable credit. Prerequisite: permission of science staff instructor.
Hours to be arranged. Staff.
Independent study.

662 Environmental Control Systems Spring. 3 credits. Lecture and seminar. Prerequisite: Architecture 362.
Hours to be arranged. R. Crump.
The influences of the environment on the design of buildings and urban developments. Lecture and workshop exercises use the wind tunnel and artificial sun.

667–668 Architecture in Its Cultural Context I and II 667, fall; 668, spring. 4 credits each term. Prerequisite: permission of instructor.
Sem, F 9:05–11. B. MacDougall.
Fall term, theory; spring term, method and problem solving. An examination of the relationship between architecture and other aspects of culture. Emphasis on the motivations for particular architectural forms, and especially on theories or architecture. Examples from the United States and Asia.

Graduate Courses

761–762 Architectural Science Laboratory 761, fall; 762, spring. Variable credit. Open to graduate students only.
Hours to be arranged. Staff.
Projects, exercises, and research in the architectural sciences.

763–764 Thesis or Research in Architectural Science 763, fall; 764, spring. Variable credit. Limited to graduate students.
Hours to be arranged.
Independent study.

The Profession of Architecture

Sequence Courses

481–482 Professional Practice 481, fall; 482, spring. 2 credits each term.
Lec, T 1:25–3:20. Staff.
An examination of organizational and management theories and practices for delivering professional design services. Included are an assessment of the building industry and its influence on practice; an analysis of the basic management functions within professional firms; and the legal concerns facing practitioners today. Sessions with selected guest participants focus on case studies.

Architectural Drawing

191 Analytical Drawing I Fall. 2 credits.
Studios, T R 9:05–11.
Freehand drawing with emphasis on line and perspective representation of form and space.

192 Analytical Drawing II Spring. 2 credits. Prerequisite: Architecture 191.
Studios, T R 9:05–11. Staff.
Freehand drawing as a means of conceiving and expressing spatial form; line weight, shades and shadows, and figure drawing.

Washington Field Program

Fourth- and fifth-year students in good standing who have completed the requirements of the first three years of the curriculum are eligible for this program. Students must obtain permission of the program director. Courses offered include Design, Thesis Introduction, Special Problems in Architectural Design, plus the courses listed below. Other course offerings may be available.

480 Professional Studies Fall or spring. Variable credit.
Lec, hours to be arranged. M. Schack and visiting lecturers.
An examination of organizational and management theories and practices for delivering professional design services. Included are an assessment of the building industry and its influence on practice; and analysis of the basic management functions within professional firms; and the legal concerns facing practitioners today. Sessions with selected guest participants focus on case studies.

530 Professional Seminar Fall or spring. 1 credit each term.
Hours to be arranged. Staff and visiting critics.

Art

Most courses in the Department of Art are open to students in any college of the University who have fulfilled the prerequisites and who have permission of the instructor.

Fees are charged for all Department of Art courses. For freshman and sophomore fine arts majors, the fee is $20 each semester. Students from outside the department are charged $10 per course.

Courses in Theory and Criticism

110 Color, Form, and Space Fall or spring. 3 credits. Fall: limited to B.F.A. candidates.
M 9:30–11. N. Daly
A study of traditional and contemporary ways of drawing and painting. An analysis of color theory and pictorial space.

111 Introductory Art Seminar Fall. 1 credit. Limited to B.F.A. candidates.
R 4:30–6:30.
Students meet for one hour each week with a different member of the faculty. The varying artistic interests of the staff are presented and discussed.

610 Seminar in Art Criticism Fall or spring. 2 credits. May be repeated for credit. Four terms required of M.F.A. candidates. Open to other graduate students.
Hours to be arranged. J. Seley.
Historical and modern critical opinions and their relation to problems in the theory of art are studied.

Studio Courses in Painting

121–122 Introductory Painting 121, fall; 122, spring. 3 credits each term.
121: sec 1, M W 1:25–4:25; sec 2, T R 1:25–4:25.
An introduction to the problems of artistic expression through the study of pictorial composition; proportion, space, shapes, and color as applied to abstract and representational design.

221–222 Second-Year Painting 221, fall; 222, spring. 3 credits each term. Prerequisite: Art 121 or 122 or permission of instructor.
221: T R 9:05–12:05. J. Valerio.
Study of traditional and contemporary media.

321 Third-Year Painting Fall. 4 credits. Prerequisite: 9–12 studio credits, depending on major.
T R 10:10–1. E. Mikus.
Continued study of the principles of painting and the selection and expressive use of materials and media. Group discussions and individual criticism.

322 Third-Year Painting Spring. 4 credits. Prerequisite: Art 321.
Staff.
Continued study of the principles of painting and the selection and expressive use of materials and media. Group discussions and individual criticism.

421 Fourth-Year Painting Fall. 4 credits. Prerequisite: Art 322.
T R 10:10–1. E. Mikus.
Further study of the art of painting through both assigned and independent projects, executed in various media. Instruction through group discussions and individual criticsim.

422 Senior Thesis in Painting Spring. 4 credits. Prerequisite: Art 421.
Staff.
Advanced painting project to demonstrate creative ability and technical proficiency.

721–722, 821–822 Graduate Painting 721 and 821, fall; 722 and 822, spring. Credit as assigned. May be repeated for credit. Limited to M.F.A. students in painting.
Staff.
Students are responsible, under staff direction, for planning their own projects and selecting the media in which they are to work. All members of the staff are available for individual consultation.

Studio Courses in Graphic Arts

131 Introduction to the Graphic Arts Fall or spring. 3 credits.
Fall: T R 1:25–4:25. Staff.
Students explore the techniques of making impressions, including those that produce the raised surface of the relief print, the lowered surface of the intaglio print, and the flat (planographic) surface of the lithograph.

132 Introductory Silk-Screen Printing Fall or spring. 3 credits.
Fall: M W 9:05–12:05. S. Poleskie.
A basic introduction to the fine art silk-screen printing. Students explore the use of lacquer film, paper stencil, tusche, and glue, and other commonly used procedures of serigraphy.

230 Advanced Intaglio Printing Fall or spring. 3 credits. Prerequisite: Art 131 or 132, or permission of instructor.
Fall: T R 9:05–12:05.
Continuation of the study and practice of methods of printing from below the surface with emphasis on engraving, lift ground, experimental techniques, and color.

231 Introductory Lithography Fall or spring. 3 credits.
Fall: M W 1:25–4:25. G. Page.
The theory and practice of planographic printing, utilizing the limestone block and aluminum plate. Basic lithographic techniques of crayon, wash, and transfer are studied.

233–234 Advanced Lithography 233, fall; 234, spring. 3 credits each term. Prerequisite: Art 231.
233: M W 9:05–12:05. G. Page.
Continuation of the study and practice of planographic printing with emphasis on color.

330 Advanced Silk-Screen Printing Spring. 3 credits. Prerequisite: Art 132.
Hours to be arranged. S. Poleskie.
Continuation of Art 132 including photographic stencils, three-dimensional printing, and printing on metal, plastic, and textiles.

331 Advanced Printmaking Fall. 4 credits. Prerequisite: 6 credits of graphic art course work.
T R 9:05–12:05. Staff.
Study of the art of graphics through both assigned and independent projects. Work may concentrate in any one of the graphic media or in a combination of media.

332 Advanced Printmaking Spring. 4 credits. Prerequisite: 6 credits of graphic art course work.
Staff.
Continuation and expansion of Art 331.

431 Senior Printmaking Fall. 4 credits. Prerequisite: courses in printmaking.
Hours to be arranged. Staff.
Further study of the art of graphics through both assigned and independent projects executed in various media. Instruction through group discussions and individual criticism.

432 Senior Thesis in Printmaking Spring. 4 credits. Prerequisite: four courses in printmaking.
Hourst to be arranged. Staff.
Advanced printmaking project to demonstrate creative ability and technical proficiency.

731–732, 831–832 Graduate Printmaking 731 and 831, fall; 732 and 832, spring. Credit as assigned. May be repeated for credit. Limited to M.F.A. candidates in graphic arts. Prerequisite: permission of instructor.
Staff.
Students are responsible, under staff direction, for planning their own projects and selecting the media in which they will work. Members of the staff are available for consultation; discussion sessions of work in progress are held.

Studio Courses in Sculpture

141–142 Introductory Sculpture 141, fall; 142, spring. 3 credits each term.
Sec 1, M W F 8–11; sec 2, T R 8–11; sec 3, T R 3:35–6:35. Staff.
A series of studio problems introduce the student to the basic considerations of artistic expression through three-dimensional design. Modeling in Plasteline, building directly in plaster, and casting in plaster.

241–242 Second-Year Sculpture 241, fall; 242, spring. 3 credits each term. Prerequisites: nonmajors, none: majors, Art 141–142.
Sec 1, M W F 1:25–4:25; sec 2, T R 12:20–3:20.
Staff.
Various materials including clay, plaster, wood and stone are used for exercises involving figurative modeling, abstract carving, and other aspects of three-dimensional form and design.

341 Third-Year Sculpture Fall. 4 credits. Prerequisite: Art 242.
Sec 1, M W F 1:25–4:25; sec 2, T R 1:25–3:20.
Staff.
Continued study of the principles of sculpture and the selection and expressive use of materials and media. Group discussions and individual criticism.

342 Third-Year Sculpture Spring. 4 credits. Prerequisite: Art 341.
Staff.
Continuation and expansion of Art 341.

441 Fourth-Year Sculpture Fall. 4 credits. Prerequisite: Art 342.
Sec 1, M W F 1:25–4:25; sec 2, T R 12:20–3:20.
Staff.
Further study of the art of sculpture through both assigned and independent projects executed in various media. Instruction through group discussions and individual criticism.

442 Senior Thesis in Sculpture Spring. 4 credits. Prerequisite: Art 441.
Staff.
Advanced sculpture project to demonstrate creative ability and technical proficiency.

741–742, 841–842 Graduate Sculpture 741 and 841, fall; 742 and 842, spring. Credit as assigned. May be repeated for credit. Limited to M.F.A. students in sculpture.
Staff.
Students are responsible, under staff direction, for planning their own projects and selecting the media in which they are to work. All members of the staff are available for individual consultation. Weekly discussion sessions of works in progress are held.

Studio Courses in Photography

161–162 Introductory Photography 161, fall; 162, spring. 3 credits each term. Darkroom fee, $30.
Fall: T R 3:25–6:30. Staff.
A basic lecture-studio course in black and white photography for beginners. Emphasis is on basic camera skills, darkroom techniques, and understanding of photographic imagery.

261 Second-Year Photography Fall. 3 credits. Prerequisite: Art 161 or 162 or permission of instructor. Darkroom fee, $30.
T R 9:05–12:05.
A studio course in color photographic processes, including color toning and hand coloring of black and white prints, and color printing. Emphasis is on camera skill, color techniques, image content, and creative use of color photography.

262 Second-Year Photography Spring. 3 credits. Prerequisite: Art 161 or permission of instructor. Darkroom fee, $30.
Hours to be arranged. Staff.
A studio course in black and white or color photography. Emphasis is on advanced camera and darkroom skills, image content, and creative use of black and white photography.

263 Photo Processes Fall or spring. 3 credits each term. Prerequisite: Art 161 or 162 or permission of instructor. Darkroom fee, $30.
Hours to be arranged. Staff.
A studio course in early photo and nonsilver processes. Emphasis upon camera skill, basic techniques and processes, image content, and creative use of photo processes.

361–362 Third-Year Photography 361, fall; 362, spring. 4 credits each term. A studio course intended for photography majors and other qualified students. Prerequisite: Art 261 and 262 or permission of instructor. Darkroom fee, $30.
361: T R 3:30–6:25. S. Bowman.
Continued study of creative use of photography with emphasis upon specialized individual projects.

461–462 Fourth-Year Photography 461, fall; 462, spring. 4 credits each term. A studio course intended for photography majors and other qualified students. Prerequisite: Art 361 and 362 or permission of instructor. Offered only for students who enter in the fall of 1977. Darkroom fee, $30.
461: T R 3:30–6:25. S. Bowman.
Continued study of creative use of photography leading to thesis exhibition.

Studio Courses in Drawing

151–152 First-Year Drawing 151, fall; 152, spring. 3 credits each term.
151: sec 1, M W 1:25–4:25; sec 2, M W 9:05–11, plus 2 hours to be arranged; sec 3, T R 1:25–4:25.
A basic drawing course in the study of form and techniques. Contemporary and historical examples of figure drawing are analyzed in discussion.

251–252 Second-Year Drawing 251, fall; 252, spring. 3 credits each term. Prerequisites: Art 151 or 152, or permission of instructor.
251: sec 1, T R 1:25–4:25; sec 2, M W 1:25–4:25.
Staff.
A continuation of Art 151, but with a closer analysis of the structure of the figure and a wider exploitation of its purely pictorial qualities.

[351 Third-Year Drawing Fall. 3 credits. Prerequisites: Art 151, 152, 251, and 252. Staff. Not offered 1980–81.]

Graduate Thesis

712 Graduate Thesis Spring. Credit as assigned.
Staff.
For graduate students in their last term in the programs in painting, sculpture, and graphics.

Special Studio Courses

270 Special Studio Fall or spring. Credit as assigned. May be repeated for credit. Prerequisite: permission of instructor.
Staff.
For transfer students and others whose standing in the professional sequence is to be determined. May be in painting, sculpture, graphics or photography.

370 Studio Concentration Fall or spring. Credit as assigned. May be repeated for credit. Prerequisite: permission of instructor.
Staff.
For B.F.A. degree candidates who want a greater concentration in drawing, painting, sculpture, graphics, or photography in the upperclass years.

470 Studio Concentration Fall or spring. Credit as assigned. May be repeated for credit. Prerequisite: permission of instructor.
Staff.
For B.F.A. degree candidates who want a greater concentration in drawing, painting, sculpture, graphics, or photography in the upperclass years.

City and Regional Planning

Most courses in the Department of City and Regional Planning are open to students in any college of the University who have fulfilled the prerequisites and have the permission of the instructor.

Course Numbers

There are two components to city and regional planning course numbers: (a) Courses numbered from 500–599 and 600–699 are generally considered to be introductory and/or first-year courses; those numbered from 700–799 and 800–899 are generally considered to be more advanced courses. Upperclass undergraduate courses are numbered from 300–499. (Undergraduates with the necessary prerequisites and permission of the instructor may enroll in courses numbered 500 and above.) (b) Courses are grouped (by the tens digit of the course number) to represent the underlying structure of the planning curriculum as follows: theory and quantitative methods (0, 1, 2), program areas (3, 4, 5), and interprogram topics (6, 7, 8, 9).

The department attempts to offer courses according to the following schedule; however, students should check with the department at the beginning of each semester for the latest changes.

Urban and Regional Theory

200 Contemporary Issues in Urban and Regional Studies Spring. 4 credits. Prerequisite: one course in either government, economics, or sociology.
N. Gilgosch.
Interdisciplinary course exploring at an introductory level theories of the development and spatial patterning of cities and regions and the political and economic interactions with them. Emphasis will be on the relationships between these theories and current social and urban issues.

400/500 Introduction to Urban and Regional Theory Spring. 4 credits. A first-year graduate course, open to juniors and seniors.
T 2:30–5:30. W. W. Goldsmith.
A review of attempts by the various social sciences to understand the contemporary city and its problems, particularly as seen by planners. Material is drawn from urban and regional economics, human ecology, urban sociology, psychology, anthropology, and geography in order to explain the location, size, form, and functioning of cities. Traditional and contemporary critical theory is examined as it applies to physical, social, and economic problems of the modern city.

[402 Spatial Analysis of Urban and Regional Systems I Fall. 4 credits. Not offered 1980–81.
Staff.
Introductory review of theories dealing with the spatial distribution of population and economic activity drawn from various social science disciplines, such as geography, economics, and sociology.]

[403 Spatial Analysis of Urban and Regional Systems II Spring. 4 credits. Prerequisite: CRP 402. Not offered 1980–81.
A detailed, in-depth review of recent research dealing with such topics as population distribution, migration, location of industry and economic activity, and the spatial organization of urban and regional social systems.]

[600 Urban Economic Analysis Fall. 3 credits. Prerequisite: CRP 500 or equivalent. Not offered 1980–81.
S. Czamanski.
Examination of the city as an economic entity with spatial characteristics. Urban phenomena are analyzed from an economic point of view, using tools from economic analysis, Areas examined include patterns and determinants of urbanization, urban structure and location of activities, urban land and housing markets, the role of urban transportation, and urban public policy.]

708 Fieldwork/Workshop in Urban and Regional Theory Fall or spring. Credit as assigned.
Staff.
Work on problems in urban and regional theory in a field and/or laboratory setting.

709 Special Topics in Urban and Regional Theory Fall or spring. Credit as assigned.
Staff.

800 Advanced Seminar in Urban and Regional Theory I Fall. 3 credits. Prerequisite: CRP 500.
M 3:35–5:30. B. G. Jones.
The theory or urban spatial organization. Economic, technological, and social factors leading to urbanization and various kinds of spatial organizations are explored. Major theoretical contributions to the understanding of intraregional and intraurban distribution of population and economic activity are reviewed.

801 Advanced Seminar in Urban and Regional Theory II Spring. 3 credits. Prerequisite: CRP 800.
M 3:35–5:30. B. G. Jones.
A continuation of CRP 800, concentrating on recent developments.

809 Informal Study in Urban and Regional Theory Fall or spring. Credit as assigned.
Staff.

Planning Theory and Politics

413 Planning and Political Economy I Fall. 4 credits.
Staff.
This course deals with Marx's methodological approach and his elaborations in volume I of *Capital*. Topics will cover Marx's method, labor theory of value, the formula of *Capital*, labor-process and surplus-value, absolute and relative surplus-value, general law of capital accumulation, and transition from feudalism to capitalism. Students are expected to have some familiarity with Marx's approach. Readings from Marx and modern writers such as Sweezy and Mandel will average about 100 pages a week.

414 Planning and Political Economy II Spring. 4 credits.
W. W. Goldsmith.
This course covers the economic formulations Marx expounded in volumes II and III of *Capital* and in *Theories of Surplus-Value*, as well as current contributions on the different ensuing debates. Topics cover the circulation of capital, productive and unproductive labor, reproduction schemes, accumulation, the transformation of surplus-value into profits, the transformation of values into prices of production, the tendency of the rate of profit to fall, and crises. The end of the course treats the division of profits into profits of enterprise, interest, and, in particular, ground rent. Students must have read volume I of *Capital* and be generally familiar with Marx's approach. Readings from Marx and contemporary writers will average about 100 pages a week.

510 Introduction to Planning Theory Spring. 3 credits.
T 1:25–3:20. P. Clavel.
Normative and behavioral models of decision making for the provision of public goods and services. Theories of individual decision and choice are reviewed, followed by applications in institutional contexts stressing the impact of alternative organizational and political models of social decision processes.

511 Introduction to Planning Fall. 4 credits.
M W F 10:10–11. P. Clavel.
The origins, history, programs, and contemporary issues of city and regional planning in the United States. Conceptions of the state, the role of planners in public action, and the dominant methods and values of planners are discussed and criticized.

612 Urban Politics and Planning Spring. 3 credits.
I. R. Stewart.
A consideration of the political dimension of planning and renewal activities. Emphasis on government mandate and structure, as well as interest group and power relationships as they are related to development decision-making processes. Theory and case-study analyses.

614 Neighborhood and Community Theory Spring. 4 credits.
M 12:20–3:20. N. Gilgosch.
An examination of contemporary social and economic conditions of neighborhoods; community differentiation reinvestment and revitalization policies and practice; community control; and the role of the community in the provision of goods, services, and social support.

710 Politics of the Planning Process Spring. 4 credits.
W 2:30–4:25. P. Clavel.
Analysis of planning and political institutions in selected subjects and policy areas, relating national and subnational levels. Subjects are drawn from such areas as environmental control and use policy, industrial development, transportation, and community development. Theories of planning and politics are compared for their analytical usefulness in these areas.

711 Planning and Organization Theory Fall. 4 credits.
R 3:35–5:30. P. Clavel.
An examination of organizational and administrative models relevant to plan formation and implementation. Applications are made to such programs as community development, regional administration, urban renewal, and land-use control.

718 Fieldwork/Workshop in Planning Theory and Politics Fall or spring. Credit as assigned.
Staff.
Work on problems in planning theory and politics in a field and/or laboratory setting.

719 Special Topics in Planning Theory and Politics Fall or spring. Credit as assigned.
Staff.

810 Advanced Planning Theory Fall. 3 credits. Prerequisite: CRP 500 or 710.
F 3:35–5:30. B. G. Jones.
A survey of the works of scholars who have contributed to current thinking about planning theory. Alternative assumptions concerning models of man and theoretical concepts concerning the nature of planning today are considered.

819 Informal Study in Planning Theory and Politics Fall or spring. Credit as assigned.
Staff.

Quantitative Methods and Systems Analysis

320 Introduction to Quantitative Methods I Fall. 3 credits. Prerequisite: Mathematics 108 or equivalent, or permission of instructor.
T R 10:10–12:05. Staff.
An introduction to the application of quantitative methods to issues in urban and regional studies. Special attention is given to the characterizations, evaluations, and control of evolving processes of urban and regional issues. Emphasis is on methods for the description of physical and social phenomena by mathematical means. Topics include linear and non-linear deterministic processes, elementary stochastic process, process identification, and simulation.

321 Introduction to Quantitative Methods II Spring. 3 credits. Prerequisite: CRP 320, or permission of instructor.
Staff.
Methods for the evaluation and control of process performance. Topics include linear and dynamic programming, single stage and multistage decisions, and elementary statistical decision theory.

520 Mathematical Concepts for Planning Fall. 1, 2, 3, 4 credits. Prerequisite: permission of instructor.
T R 9:05–11. P. Brandford.
Intended for students having little or no background in college mathematics. Basic concepts in matrix algebra, calculus, and probability are covered in self-contained units of one credit each. Students may register for any or all of these topics.

Mathematics 201, Mathematics for the Social Sciences, and Sociology 420, Mathematics for Sociologists, are acceptable substitutes.

521 Introduction to Computers in Planning Fall. 3 credits.
T R 12:20–2:15; lab to be arranged. P. Brandford.
An introduction to the use of computers in the problem-solving and planning processes. Students run programs using PL/1 or another appropriate programming language. Brief introduction to computer systems and the use of library routines. Advantages and limitations of using computers are considered.

620 Planning Analysis Spring. 4 credits. Prerequisite: CRP 621.
M W F 10:10–11:00; lab, T 2:30–4:25. B. G. Jones.
A survey of commonly used techniques for analyzing various aspects of subnational socioeconomic systems emphasizing planning applications.

621 Statistical Analysis for Planning Spring. 3 credits. Prerequisites: CRP 520 or equivalent and permission of instructor.
T R 9:05–9:55; lab, T 4:30–5:30. Staff.
An introduction to basic methods of statistical analysis with an emphasis on their use in the decision-making process in planning. Material in decision theory, sampling, estimation, hypothesis testing, and prediciton will be introduced.

622 Planning Information Systems Fall. 3 credits. Prerequisite: CRP 521 or equivalent.
T R 3:35–4:25; lab to be arranged. G. Ziegler.
The design and use of computer-based information systems for planning and policy analysis, including conventional data processing and advanced data base systems. Technical aspects in the design and structure of such information systems are introduced along with a variety of applications.

623 Methods of Social Policy Planning Spring. 3 credits. Prerequisite: CRP 521 or equivalent.
R 12:20–2:15. N. Gilgosch.
An examination of methodologies of needs assessment, programming, and evaluation suitable for social planning problems. Many of the methodologies, survey research, social area analysis, and social indicators have been drawn from other social science disciplines but are applied to policy and planning issues. Others, such as needs assessment, social impact assessment, goal attainment, PPBS, and PERT were developed directly or were adapted for use in social planning.

720 Quantitative Techniques for Policy Analysis and Program Management Fall. 4 credits.
M W 9:05–11; lab, W 2:30–3:20. D. Lewis.
Selected analytical techniques used in the planning and evaluation of public policy and public investments are examined. Topics include simulation modeling, benefit-cost and cost effectiveness analysis (including capital budgeting), and optimization strategies.

[721 Simulation in Planning and Policy Analysis Fall or spring. 3 credits. Prerequisites: CRP 621 and 521 or equivalent. Not offered 1980–81.
T R 4:40–5:30. S. Saltzman.
The design and use of simulation models in planning and policy analysis. Various approaches drawn from discrete stochastic simulation, econometric simulation, microanalytic simulation, and urban dynamics are evaluated. Applications in design, land use, regional development, and social policy will be considered. Students run their own programs on the Cornell computer.]

722 Decision Analysis for Policy Planning and Program Management Spring. 4 credits.
M W F 9:05–9:55; lab, W 12:20–2:15. D. Lewis.
An examination of selected techniques for analyzing complex dynamic decision problems in the planning context. Topics include dynamic programming (deterministic and probabilistic), integer programming, and process simulation (queueing models).

728 Fieldwork/Workshop in Systems Planning and Analysis Fall or spring. Credit as assigned.
Staff.
Work on applied systems planning problems in a field and/or laboratory setting.

729 Special Topics in Quantitative Methods and Analysis Fall or spring. Credit as assigned.
Staff.

829 Informal Studies in Quantitative Methods and Analysis Fall or spring. Credit as assigned.
Staff.

Regional Development Planning

[430 Regional Economic Development Fall. 4 credits. Prerequisite: CRP 500. Not offered 1980–81.
Staff.
Problems of and theories about development of lagging, underdeveloped, or poor regions in industrial nations, with emphasis on planning implementation.]

[530 Introduction to Regional Development Planning Fall. 3 credits. Prerequisite: CRP 500. Not offered 1980–81.
Staff.
An introduction to the history, theories, methods, and processes of regional development planning. Will also focus on planning for specialized functions in various public agencies.]

[630 Regional Development Administration Fall or spring. 4 credits. Not offered 1980–81.
M 1:25–3:20. P. Clavel.
Administrative institutions relevant to regional development policies, with attention to the United States, Western Europe, and Third World countries. Approaches to theory, measurement, and spatial distribution of institutions are covered with reference to the design of effective programs.]

730 Regional Planning Methods Fall. 4 credits. Prerequisites: CRP 620, basic economics, some calculus, and statistics.
T 11:15–1:10. S. Czamanski.
Problems in the formulation and testing of scientific hypotheses. Focus is on depressed or underdeveloped regions; also includes some discussion of past and current work of participants and their dissertations. Topics include construction of models, main estimating techniques, and some applied regional models.

731 Optimization Techniques in Planning Spring. 4 credits.
S. Czamanski.
A continuation of CRP 730.

732 Regional Industrial Development Spring. 4 credits.
S. Czamanski.
The course will cover issues of interregional disparities, agricultural vs industrial development, planning of industrialization in market, mixed and planned economies. The determinants of industrial location and ability of a region to attract industries will be discussed, as well as the role of trade and of appropriate technology and technical progress. Regional industrialization policies based on neoclassical, radical, and structuralist approaches to development will be reviewed.

738 Fieldwork/Workshop in Regional Development Planning Fall or spring. Credit as assigned.
Staff.
Work on applied problems in regional development planning in a field and/or laboratory setting.

739 Special Topics in Regional Development Planning Fall or spring. Credit as assigned.
Staff.

830 Seminar in Regional Interindustry Analysis and Programming Spring. 4 credits. Prerequisites: basic economics and elementary matrix algebra.
M 11:15–1:10. S. Czamanski.
Advanced treatment of regional industrial structure, methods of construction and applications of input-output, linear programming, saturation, and dynamic optimization. Examples of recent applications of the techniques discussed to the solution of actual regional problems will be analyzed.

831 Techniques of Regional Accounting Fall or spring. 3 credits. Prerequisites: CPR 620 and Economics 312 or equivalent.
Staff.
Methods of construction of the regional social accounts and their application to regional planning. Measuring levels of activity within regions, such as income and product accounts, is emphasized. Methods of estimating flows between regions, such as balance of payment accounts, are also considered.

832 Location Theory Fall or spring. 3 credits. Prerequisites: CRP 500 and 620 and Economics 311–312, or equivalent.
R 7–10 p.m. W. Isard.

Traditional Weberian location doctrine; transport orientation, labor orientation, agglomeration, and urban rent theory are examined. Interregional trade and market and supply area analysis is treated. Particular attention is paid to Loschian and Christaller systems of urban places.

833 Methods of Regional Analysis Spring. 3 credits.
R 1:25–4:25. W. Isard.
Advanced applications of interregional and regional input-output and linear programming techniques to development problems. Applications of spatial interaction and growth (intertemporal) models to the analysis of urban and multiregional systems, with particular reference to environmental quality management.

839 Informal Study in Regional Development Planning Fall or spring. Credit as assigned.
Staff.

Social Policy Planning

[340 Institutional Decision Processes Fall. 3 credits. Not offered 1980–81.
Staff.
An introduction to the administrative and political environment in which urban and regional issues occur. Starting from an analysis of social decision procedures, the course then goes on to describe the characteristic administrative and political institutions in which issues on urban and regional problems take place; some attention is also given to the underlying dynamics of economic and political development in cities and regions, and the roles that various participants play in these decision processes.]

[442 Social and Political Studies of Science (also Sociology 355) Spring. 3 credits. Not offered 1980–81.
W 2:30–4:30. D. Nelkin, S. Del Sesto.
A view of science less as an autonomous activity than as a social and political institution. Focus is on its relationship to government, the media, religion, and education. Drawing from recent controversies, questions of ethics and social responsibility in science, struggles to maintain internal control over research and the teaching of science, and concepts of limits to inquiry are discussed.]

440 The Impact and Control of Technological Change (also Economics 302 and Government 302) Cosponsored by the Program on Science, Technology, and Society. Spring. 4 credits.
T R 2:30–4:25. R. Brickman and guest lecturers.
Social, environmental, and economic implications of technological change in the context of present policies and strategies of control. Several specific cases are considered in detail, followed by investigation of the problems of a modern technological society. Alernative political and economic solutions are explored.

540 Introduction to Social Policy Planning Fall. 4 credits.
R 12:20–3:20. N. Gilgosch.
The process and politics of providing public services, primarily social services, within the context of changing fiscal and social conditions. Topics include (1) a review of the nature and source of selected social problems and of the present service systems that attempt to meet these needs; (2) an analysis of the inadequacies and problems of this system in the light of changing conditions that affect service delivery, such as fiscal and service disparities, budget retrenchment, and political movements to limit spending such as Proposition 13; and (3) an exploration of new forms or alternatives to the existing service delivery systems.

541 The Politics of Technical Decisions I (also Government 628 and B&PA NPA 515) Cosponsored by the Program on Science, Technology, and Society. Fall. 4 credits.
W 2:30–4:25. S. Del Sesto.
Political aspects of decision making in areas traditionally regarded as technical. Subjects include the origins and characteristics of "technical politics," the role of experts in government, and the problem of expertise in a democratic system. Alternatives to current decision-making procedures are explored.

542 The Politics of Technical Decisions II (also Government 629 and B&PA NPA 516) Cosponsored by the Program on Science, Technology, and Society. Spring. 4 credits.
Prerequisite: CRP 541 or permission of instructors.
Hours to be arranged. D. Nelkin.
A continuation of CRP 541, focusing on decision making in several technical policy areas. Students develop individual or group research projects focusing on policy decisions with a significant technical component and considerable public impact.

543 Planning, Organizing, and Public Service Delivery Fall or spring. Credit as assigned.
R 10:10–12:05. J. Forester.
An exploration of planners' roles and practices with special attention to organizational and political contexts of planning and policy analysis efforts. Focus is on communicative dimensions of organizational behavior and planning practice; planning is assessed as an organizing activity extending far beyond technical problem-solving.

544 Recurring Themes in Social Policy Planning Spring. Credit as assigned.
J. Forester.
A seminar devoted to the understanding of problems of social policy planners. Recurring social policy themes are studied: professional power and dependency-creation, political and technical aspects of expertise, organizational and institutional settings of social policy programs and services, problems of professional altruism. Work of Titmuss, Lubove, Goffman, and Illich is discussed.

[640 Critical Social Theory in Planning Fall. 4 credits. Limited to seniors and graduate students. Intended for students already familiar with "radical" social theory. Prerequisite: permission of instructor. Not offered 1980–81.
F 2:30–4:25. W. Goldsmith.
A review of Marxist methods and analysis of controversies in critical theory: problems of capital accumulation, the role of the state, the role of the intellectual, and alternative paths to socialism, focusing on the industrialized West.]

[642 Critical Theory and the Foundation of Planning Analysis Fall. Credit as assigned. Not offered 1980–81.
J. Forester.
Beginning with Weber, Marx, and Durkheim, the fundamental assumptions, theories, and frameworks structuring planning and policy analyses are explored. Positivistic, phenomenological, ordinary language, and critical perspectives are considered as they clarify or obscure questions of value, rationality, objectivity, interpretation, and action in public policy contexts.]

740 Seminar in Social Policy Research and Analysis Spring. 4 credits.
Staff.
The focus is on examining contemporary methods of social policy analysis, including their political implications, and developing multidisciplinary approaches to selected social policy issues. The dilemmas of action research and of implementing research findings are explored.

743 Critical Theory and Public Policy Spring. 4 credits. Prerequisite: background in political or social theory.
M 1:25–3:20. J. Forester.
This seminar explores the critical theory of Jurgen Habermas, particularly its application to problems of planning and public policy analysis. We consider problems of legitimation, power, rationalization, instrumental and communicative action, ideology, and systematically distorted communications as they appear more broadly in the practice of planners, policy analysts, or professionals.

[744 Urban Financial Planning and Management Spring. 3 credits. Not offered 1980–81.
Staff.
Introduction to the theory and practice of financial management and planning in urban government, including budgeting, capital expenditures, management of short-term assets, borrowing, taxation, and intergovernmental finance. Case studies and problem sets that place the student in a decision-making context are emphasized.]

[745 Urban Fiscal Analysis Fall. 3 credits. Prerequisite: CRP 744 or a course in public finance. Not offered 1980–81.
Staff.
Government financial information (fund accounting, financial statements, and budgets) is introduced and this information and other data are used to identify major fiscal problems and their causes faced by cities. Alternative solutions to urban fiscal problems are evaluated using this analysis.]

746 Informal Seminar in Planning Theory: Philosophy, Ethics, and Values in Planning Fall or spring. Credit as assigned.
J. Forester.
An informal seminar to discuss problems of values, ethics, and alternative philosophical positions that are inherent in various planning proposals or perspectives.The claims of incrementalists to the contrary, can planning be ethical? Must value judgments be arbitrary?

747 Seminar on Jurgen Habermas and the Analysis of Public Policy Spring. Credit as assigned.
J. Forester.
Discussions to ground Habermas's theory of systematically distorted communication in the context of planning and public policy analysis. Themes include communicative action, limits of instrumental rationality, critique of ideology and analysis of distortions of communication, relationship of critical theory to practices, and praxis, necessary interestedness of inquiry.

748 Fieldwork/Workshop in Social Policy Planning Fall or spring. Credit as assigned.
Staff.
Work on applied problems in social policy planning in a field and/or laboratory setting.

749 Special Topics in Social Policy Planning Fall or spring. Credit as assigned.
Staff.

849 Informal Study in Social Policy Planning Fall or spring. Credit as assigned.
Staff.

Urban Development Planning

[551 Suburbanization and Metropolitan America Fall. 3 credits. Prerequisite: permission of instructor. Not offered 1980–81.
I. R. Stewart.
The major issues in suburban development, metropolitan growth analysis, and the role of new communities in accommodating expected future population.

552 Urban Land-use Planning I Spring. 3 credits.
T 12:20–2:15. S. Stein.
Surveys, analyses, and plan-making techniques for guiding physical expansion and renewal of urban areas; location requirements, space needs, interrelationships of land uses. Emphasis on residential, commercial, and industrial activities and community facilities; housing and neighborhood conditions. Lectures, seminars, and field exercises.

553 Urban Land-use Planning II Spring. 2 credits. Prerequisite: CRP 552 or permission of instructor.
F 11:15–1:10. S. Stein.
Consideration in-depth of neighborhoods, central business districts, shorelines and waterfronts, new towns, planned-unit developments, high-density housing, highway-oriented uses, and others.

554 Introduction to Environmental Planning Design Fall. 3 credits. Intended for graduate planning students without design backgrounds. Prerequisite for other students: permission of instructors.
M W 11:15–1:10. S. Stein.
Planning and design of built environments as an aesthetic reflection of comparative values and needs. Lectures, seminars, readings, and design exercises explore basic concepts and issues related to architecture, landscape, urban design, and urban planning.

555 Environmental Planning and Design Workshop Spring. 4 credits. Prerequisite: CRP 554 or permission of instructor. No previous graphics experience required.
M W 11:15–1:10, plus studio work. Staff.
Planning and design problems related to the built environment. An understanding of the design process is developed and graphic communication techniques are explored.

556 Built-Environment Education Workshop Fall and spring. 4 credits.
Lecs and sems, W 7:30–9:30 p.m. S. Stein.
Interdisciplinary teams of students from the environmental design disciplines and historic preservation program work in elementary and junior high school classrooms with school children and teachers to deepen their understanding of the impact of the built environment on their lives, and encourage their participation in the shaping of their own environment. Classroom work is emphasized.

557 Small-Town Community Design Workshop Fall and spring. 4 credits.
S. Stein.
An in-depth approach to the problems and challenges facing the small-town commercial district. Various aspects of design including building and storefront rehabilitation, graphics and signage, construction details, and presentation are explored in workshop and studio settings. Emphasis is placed on preservation of historic architecture. Students participate in downtown revitalization activities, including contact with merchants and property owners, promotional events, and community events.

651 Urban Land Policy and Programs Fall. 3 credits. Prerequisite: 653 or permission of instructor.
M 1:25–3:15. J. W. Reps.
Major problems of urban land control and management and possible solutions are considered. Subjects for discussion include taxation, compensation and betterment, large-scale public land acquisition, subsidies and incentives, and acquisition of developmental rights.

652 The Urban Development Process Spring. 2 credits. Enrollment limited. Prerequisite: CRP 511 or permission of instructor.
M 3:35–5:30. Staff.
Examination of the goals, strategies, methods, and achievements of major participants in the urban land and building market: land owners, speculators, real estate brokers, developers, bankers, lawyers, nonprofit builders, and government agencies.

653 Legal Aspects of Land-use Planning Spring. 3 credits. Prerequisite: CRP 511 or permission of instructor.
R 12:20–2:15. Staff.
Survey of leading cases and legal concepts in land-use planning, with particular attention to zoning, subdivision control, condemnation, and growth control issues.

656 Critical Areas Protection Fall. 3 credits.
M W F 9:05–9:55. R. Booth.
State government attempts to protect critical areas such as tidal wetlands, key agricultural lands, and flood plains with planning and regulatory techniques. Analysis of significant management, implementation, and legal issues.

657 Planning and Development Workshop Fall or spring. 4 credits.
Staff.

658 Regulation of Projects of State Concern Spring. 3 credits.
R. Booth.
State government attempts to regulate the planning and development of projects deemed to be of statewide concern, such as key power generation and transmission facilities and large industrial development. Analysis of significant management, implementation, and legal issues.

750 Urban Land Policy and Programs — Special Problems Fall or spring. Credit as assigned.
Staff.

758 Fieldwork/Workshop in Urban Development Planning Fall or spring. Credit as assigned.
Staff.
Work on applied problems in urban development planning in a field and/or laboratory setting.

759 Special Topics in Urban Development Planning Fall or spring. Credit as assigned.
Staff.

859 Informal Study in Urban Development Planning Fall or spring. Credit as assigned.
Staff.

Special Interprogram Topics: History and Preservation

[460 Introduction to the History of Urban Planning (also Architecture 343) Fall. 3 credits. Not offered 1980–81.
T R 9:05–9:55; lab, W 2:30–3:20. Staff.
Survey of urban planning in Western civilization, from the Greeks and Romans through medieval, Renaissance, and modern Europe, to colonial and nineteenth-century America.]

[461 Methods of Archival Research (also Architecture 542) Spring. 3 credits. Not offered 1980–81.
T 10:10–12:05. K. C. Parsons.
Examination of methods of using archival materials, including documents in the Cornell Archives and Regional History collection, for research in the history of architecture, historic preservation, and urban development.]

462 The American Planning Tradition Fall. 4 credits. No prerequisites.
M W F 9:05. J. W. Reps.
A systematic review of American city planning history, beginning with the earliest colonial settlements and ending with the era of the New Deal. An introductory lecture course requiring no previous exposure to planning or architecture and a prerequisite for students intending to take advanced seminars or independent studies in planning history.

560 Documentation for Preservation (also Architecture 546) Fall or spring. 3 credits.
M 2:30–5:30. M. A. Tomlan and visiting lecturers.
Methods of identifying, recording, collecting, processing, and analyzing information dealing with historic and architecturally significant structures, sites, and objects.

561 Historic Preservation Planning Workshop: Surveys and Analyses Fall and spring. 4 credits.
R 3:30–5:30. S. Stein, T. Werbizky.
Techniques for the preparation of surveys of historic structures and districts; identification of American architectural styles focusing on upstate New York; explorations of local historical resources, funding sources, and organizational structures. Lectures and training sessions. Emphasis on fieldwork with individuals and community organizations.

562 Perspectives on Preservation (also Architecture 545) Fall. 3 credits.
T 12:20–3:20. M. A. Tomlan and visiting lecturers.
Introductory course for preservationists. A survey of the historical development of preservation activity in Europe and America leading to a contemporary comparative overview. Field trips to notable sites and districts.

563 Problems in Contemporary Preservation Practice (also Architecture 544) Fall or spring. Variable credit.
S. W. Stein, M. A. Tomlan, T. Werbizky.
A review and critique of ongoing preservation projects, and an investigation of areas of expertise currently being developed. Presented by staff and guest lecturers.

564 Building Materials Conservation (also Architecture 645) Fall or spring. 3 credits. Open to juniors, seniors, and graduate students.
M. A. Tomlan and visiting lecturers.
A survey of the development of building materials in the United States, chiefly during the nineteenth and early twentieth centuries, and a review of the measures that might be taken to conserve them.

660 Seminar in the History of American City Planning Spring. 3 credits. Prerequisites: 462 or permission of the instructor.
J. W. Reps.
A research seminar in which each student will select a topic for oral presentation followed by the completion of a research paper. Early sessions will examine the scope of planning history, its relations to other disciplines, sources of written and graphic materials, and the uses of historical evidence in interpreting urban planning and development.

661 Historic Preservation Planning Workshop: Plans and Programs Fall and spring. Variable credit. Prerequisite: CRP 561.
Hours to be arranged. S. Stein, T. Werbizky.
Preparation of elements of historic preservation plans, designs, legislation, and special studies. Individual or group projects are selected by students. Fieldwork is emphasized.

662 Seminar in American Urban History Spring. 3 credits. Prerequisite: permission of instructor.
M 10:10–12:05. I. R. Stewart.
Seminar in the historical evolution of the American city. Emphasis on factors in urban growth, the process of urbanization, urban reform movement, and intellectual and social responses to the city.

[663 Historic Preservation Law Spring. 3 credits. Offered alternate years. Not offered 1980–81.
M W 11:15–12:05. R. Booth.
Law of historic district and landmark designation; tools for preservation (such as police power, taxation, eminent domain); recent developments in state and federal historic preservation mandates.]

664 Economics and Financing of Neighborhood Conservation and Preservation Fall. 2 credits.
B. G. Jones.
The economic and financial aspects of historic preservation and neighborhood conservation. Topics include public finance, selected issues in urban economics, real estate economics, and private financing of real estate projects.

665 Public Policy and Preservation Planning Spring. 3 credits.
I. R. Stewart.
An examination of fundamental planning concepts and issues as they relate to historic preservation. Neighborhood revitalization, federal housing programs, the role of public and private institutions, displacement, and other social issues are among the primary topics.

768 Fieldwork/Workshop in History and Preservation Fall or spring. Credit as assigned.
Staff.
Work on applied problems in history and preservation planning in a field and/or laboratory setting.

769 Special Topics in History and Preservation Fall or spring. Credit as assigned.
Staff.

869 Informal Study in History and Preservation Fall or spring. Credit as assigned.
Staff.

Special Interprogram Topics: International Studies

570 Seminar in Latin American Urban Planning and Development Fall and spring. 2 credits.
S. W. Stein and guest lecturers.
Seminar covering the broad urban planning and development problems facing Latin American cities. Historical development; current and future physical, social, economic, and administrative issues focusing on urban areas, with consideration of their regional context. Coordinated with CRP 571.

571 Workshop in Latin American Urban Planning and Development Fall and spring. 4 credits.
S. W. Stein.
Application of planning theories and methodologies to problems of Latin American cities. Selection of specific urban planning projects for survey, analysis, policy formulation, plan preparation, and program development. Students work in teams or individually in workshop/studio setting.

670 Regional Planning and Development in Developing Nations Fall. 4 credits. Prerequisite: second-year graduate standing.
T 2:30–5. W. W. Goldsmith.
Extensive case studies of development planning are analyzed. Focus is on a Marxist critique of the process of regional development through urbanization and in particular the concepts of equity and efficiency, external economies, export linkages, and internal self-sufficiency and integration. Resource development, national integration, human development, and migration problems are discussed.

671 Seminar in International Planning Spring. 1 credit. S-U grades only.
F 12:20–1:30. W. W. Goldsmith.
The International Planning Lecture Series sponsors lectures by visiting scholars or professionals in the field of international development and planning. The only formal requirement for the course is a brief evaluation of the series at the end of the semester.

771 Seminar in Science and Technology Policy in Developing Nations Spring. 3 credits.
D. Lewis.
An examination of the issues facing developing countries as they endeavor to use technology in pursuit of their national goals. Topics covered include alternative choices of technology and the associated impacts, the role of multinational corporations, government policymaking institutions, manpower development and utilization strategies, and policy instruments.

[772 Seminar in Policy Planning in Developing Nations: Technology Transfer and Adaption Fall. 3 credits. Not offered 1980–81.
F 10:10–12:05. D. Lewis.
An exploration of the international transfer of technology to developing nations and the policies used to guide this process. Topics covered include the role of foreign aid and multinational corporations, economic rationale for choice of appropriate technology, and social benefit-cost analysis. Case studies are emphasized.]

773 Seminar in Project Planning in Developing Countries Spring. 3 credits.
M 1:25–3:20. D. Lewis.
An examination of the problems and issues involved in the process of planning and implementing development projects in developing countries. The role of the planner is explored from several different disciplinary points of view through a series of case studies selected from agriculture, industry, rural development, and urban planning. Countries typically represented include: Egypt, Ethiopia, India, Jordan, Korea, Mexico, Nepal, and the Commonwealth of Puerto Rico.

[777 Theories of Development and Underdevelopment Fall. 4 credits. Prerequisite: familiarity with Marxist theory. Not offered 1980–81.
R 2:30–4:25. W. W. Goldsmith.
An exploration of current debates regarding the problem of articulation of the world economy and peripheral regions.]

778 Fieldwork/Workshop in Planning for Developing Regions Fall or spring. Credit as assigned.
Staff.
Work on applied problems in planning for developing regions in a field and/or laboratory setting.

779 Special Topics in Planning for Developing Regions Fall or spring. Credit as assigned.
Staff.

879 Informal Studies in Planning for Developing Regions Fall or spring. Credit as assigned.
Staff.

Special Interprogram Topics: Environmental Health, Housing, and Institutional Planning

480 Environmental Issues and Public Decisions Fall. 3 credits.
M W F 11:15. R. Booth.
An examination of public decisions affecting environmental quality, including the pressures that require decisions on environmental issues; the methods of influencing those decisions; the decision makers; the criteria and rationale for the decisions; and the environmental, social, political, and economic impacts.

481 Environmental Aesthetics Spring. 4 credits.
Staff.
Introduction to issues affecting the design of the large-scale built environment. Development of awareness to aspects of the urban environment; theories and concepts drawn from historical and current writings; critical analysis of extant urban spaces; understanding of the creative contributions of the design disciplines (i.e., urban designers, architects, landscape architects) to the evolving urban form. Primarily for students without background in design. Lectures, seminars, field projects.

[580 Introduction to Planning Institutions Fall. 3 credits. Not offered 1980–81.
P. Clavel.
A survey of contemporary organizational forms and political forces facilitating and inhibiting the development of the planning profession at the city, state, and regional levels. The focus is on subnational planning in the United States, but the national context and other nations are dealt with where appropriate.]

[582 Administrative Planning Spring. 3 credits. Prerequisite: permission of instructor. Not offered 1980–81.
K. C. Parsons.
An analysis of interactive elements in the planning process for colleges and universities. Topics include organizational and administrative theory, management objectives, evaluation, accountability-quantity and quality budgeting, and program planning. Governmental constraints are stressed.]

585 Introduction to Environmental Health Issues Spring. 3 credits.
F 2:30–4:25. B. G. Jones.
An examination of concepts and issues in environmental health, particularly as they relate to planning for health and medical care delivery systems, economic development, and other policy issues.

685 Environmental Epidemiology Spring. 3 credits. Prerequisite: CRP 520.
W F 11:15–12:05. P. Brandford.
Introduction to epidemiological methods. Emphasis is on the detection of changes in health status associated with changes in environmental conditions and the significance of these findings for environmental health planning.

[686 Environmental Law, Policy, and Management Fall. 3 credits. Not offered 1980–81.
M W F 11:15–12:05. R. Booth.
Examination of selected environmental law topics from a policy management standpoint. Topics include environmental impact statement preparation and analysis, pollution control laws, and government regulatory procedures.]

687 Environmental Management Workshop Spring. 3 credits.
M W F 9:05. R. Booth.
Research and analysis of environmental management topics of current interest at the state or local government level. Fieldwork emphasized in order to produce reports, recommendations, and/or draft legislation that contributes to solving current issues.

[784 The Political Economy of Health Planning Spring. 3 credits. Not offered 1980–81.
R 11:15–1:45. S. Kelman.
Lectures, reading, and fieldwork and theoretical and practical materials are combined to develop operating skills in health planning. The critical focus is on (1) the social determinants of illness, (2) the engineering model of medicine, (3) the commodity form of medical care, and (4) the prevailing economic definition of health. These topics together comprise the social context in which health planning takes place. After an intensive institutional introduction to health planning legislation, organizations, and practices, participants in the course work in one of four health planning research projects conducted in the surrounding area. Contact with local and regional organizations in and out of health planning is included.]

785 Planning and Evaluation of Environmental Health Programs and Projects Spring. 3 credits. Prerequisite: second-year graduate standing.
P. Brandford.
An examination of the use of quantitative methods and economic analysis as aids to social decision

making for action in the area of environmental health. Applications of these methods to the study of particular problems of environmental health.

786 Environmental Health Planning Fall. 2 credits. Prerequisite: second-year graduate standing.
M W 10:10. P. Brandford.
Introduction to concepts and issues in environmental health planning. Topics covered include the planning problems involved in the control of water quality, liquid and solid waste disposal, air quality, and housing quality.

[787 Health Systems Planning Fall. 3 credits. Not offered 1980–81.
T R 9:05–9:55. Staff and guest lecturers.
Issues, institutions, politics, economics, and social elements involved in the planning and administration of health problems. Special emphasis is on planning techniques and methodologies.]

788 Fieldwork/Workshop in City and Regional Planning Fall or spring. Credit as assigned.
Staff.
Work on applied planning problems in a field and/or laboratory setting.

789 Special Topics in City and Regional Planning Fall or spring. Credit as assigned.
Staff.

790 Professional Planning Colloquium I Fall. 1 credit.
Staff.

791 Professional Planning Colloquium II Spring. 1 credit.
Staff.

792 Master's Thesis, Project, or Research Paper I Fall. Credit as assigned.
Staff.

793 Master's Thesis, Project, or Research Paper II Spring. Credit as assigned.
Staff.

794 Planning Internships Fall, spring, summer. 1–4 credits.
Staff.
Combines a professional planning internship in a metropolitan area with academic study in order to gain experience and understanding of the planner's role in formulating and implementing plans and policies. Salaried internships in federal or state agencies, legislative offices, and comparable settings includes development of research, analysis, and other technical skills. Weekly seminar draws on student field experiences, assigned readings, and guest speakers to examine current issues of federal, urban, and regional policy from the perspective of planning practice.

888 Informal Studies in Environmental Health Planning Fall or spring. Credit as assigned.
Staff.

889 Informal Studies in City and Regional Planning Fall or spring. Credit as assigned.
Staff.

890 Planning Research Seminar I Fall. 1 credit. Intended for doctoral candidates in city and regional planning; other students welcome.
Staff.
Presentation and discussion of current problem areas and research by advanced doctoral students, faculty, and visitors.

891 Planning Research Seminar II Spring. 1 credit.
Staff.

892 Doctoral Dissertation I Fall. Credit as assigned.
Staff.

893 Doctoral Dissertation II Spring. Credit as assigned.
Staff.

Landscape Architecture

The Landscape Architecture Program at Cornell is sponsored by the College of Agriculture and Life Sciences (in association with the Department of Floriculture and Ornamental Horticulture) and the College of Architecture, Art, and Planning.

Landscape Architectural Design

Sequence Courses

***201 Design I: Basic Landscape Architectural Design** Fall. 5 credits.
T. H. Johnson.

***202 Design II: Basic Landscape Architectural Design** Spring. 5 credits.
M. I. Adleman.

***301 Design III: Intermediate Landscape Architectural Design** Fall. 5 credits.
P. J. Trowbridge.

***302 Design IV: Intermediate Landscape Architectural Design** Spring. 5 credits.
T. H. Johnson.

***401 Design V: Advanced Landscape Architectural Design** Fall. 4 credits.
M. I. Adleman.

402 Design VI: Advanced Landscape Architectural Design Spring. 5 credits.
P. J. Trowbridge.

501 Graduate Landscape Architecture Design Studio Fall. 5 credits. Open to graduate students in landscape architecture, architecture, city and regional planning, and fifth-year architecture students.
Lecs and studios, M W 1:25–4:25. L. J. Mirin.
Analysis, planning, and design response to problems of environmental impact. Traditional and advanced techniques of landscape architecture are applied to study natural and cultural systems and processes.

***502 Graduate Landscape Architecture Design Studio** Spring. 5 credits.
T. J. Johnson.

601 Graduate Landscape Architecture Design Studio Fall. 5 credits.
Lecs and studios, M W 1:25–4:25. L. J. Mirin.

800 Thesis Research and Preparation in Landscape Architecture Fall or spring. Credit to be arranged. Limited to candidates for Master of Landscape Architecture degree. Prerequisite: permission of the graduate field members concerned.
Hours to be arranged. Staff.

Landscape Materials and Construction

***310 Site Construction I** Spring. 4 credits.
P. J. Trowbridge.

***311 Site Construction II** Fall. 4 credits.
T. H. Johnson.

Related Courses in Other Departments

Woody Plant Materials of Landscape Use (Floriculture 213)

Drawing for Landscape Architects (Floriculture 109)

Perspective for Landscape Architects (Floriculture 110)

Landscape Architecture Principles, Theory, and History

***220 Principles of Landscape Architecture** Fall. 2 credits.
P. J. Trowbridge.

***221 Principles of Landscape Architecture** Fall. 1 credit.
Discussion to be arranged. P. J. Trowbridge.

***425 Plants and Design** Fall. 2 credits.
M. L. Adleman.

520 Contemporary Issues in Landscape Architecture Fall. 2 credits.
Lec, F 11:15, L. J. Mirin.
Recent technological, methodological, and legislative developments are assessed in terms of their probable impact on the practice of landscape architecture.

521 History of Landscape Architecture I Fall. 3 credits.
Lecs, T R 11:15; discussion to be arranged.
L. J. Mirin.
The landscape architectural tradition, from classical times to the present, is examined as a reflection of the diverse influences that have generated physical modifications of outdoor space. Recognition of the principles and techniques inherent in noted examples of the altered environment is emphasized.

522 History of Landscape Architecture II Spring. 3 credits.
Lecs, T R 11:15; disc to be arranged. L. J. Mirin.
Development of landscape architectural design in the United States from the time of Jefferson to the present is examined as a unique expression of the American experience. Influences exerted by factors such as the physical landscape, the frontier and utopian spirit, and the cultural attitudes and assumptions of democracy and capitalism are traced as they affect the forms of urban parks, private and corporate estates, suburban and public housing, transportation planning, national parks, and other aspects of open-space design in which landscape architects have made significant contributions.

***622 Graduate Seminar in Landscape Architecture** Spring. 2 credits.
T. J. Johnson.

Landscape Planning

***431 Introduction to Parks and Recreation** Fall. 2 credits.
E. J. Carter.

***432 Issues in Parks and Recreation** Spring. 2 credits.
E. J. Carter.

530 Urban Landscape Planning and Design Spring. 3 credits.
Lec, disc, and field trips to be arranged. L. J. Mirin.
The principles and techniques of landscape architectural development and conservation of urban open space. Areas studied include the urban landscape tradition, urban arboriculture, streets and strollways, design controls and public space, recreation, and housing.

*Offered through the College of Agriculture and Life Sciences.

***[531 Regional Landscape Inventories and Information Systems: An International Perspective** Fall. 3 credits. A. S. Lieberman. Not offered 1980–81.]

***532 Analysis and Use of Vegetation in Comprehensive Land Planning** Spring. 3 credits.
A. S. Lieberman.

Landscape Industry

***140 Introduction to Landscape Design** Fall or spring. 3 credits.
R. W. Dwelle.

***340 Landscape Design for Nurserymen or Landscape Contractors** Fall or spring. 3 credits.
D. W. Dwelle.

Independent Study

***555 Independent Study in Landscape Architecture** Fall or spring. 1–3 credits as assigned.
Staff.

621 Summer Internship Seminar Fall. 2 credits.
Hours to be arranged. L. J. Mirin.
Presentation and discussion of projects developed during summer internships.

650 Fieldwork/Workshop in Landscape Architecture Fall or spring. Variable credit.
Hours to be arranged. Staff.
Work on applied problems, under faculty supervision, in landscape architecture in a field and/or studio setting.

*Offered through the College of Agriculture and Life Sciences.